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Hunting the Haunting: Searching for Orbs, Specters, and Ghostly Creatures Through Digital Technologies

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Abstract

The development of digital technologies had a profound impact on religions, bringing about resistance and adaptations of traditional, theistic systems to this new technological and mediated environment, and on the dynamics of invention and creativity, as demonstrated by the wave of new digital religious movements. Scholars' attention has mainly been put on the modalities of *Searching God on the Net*. This emphasis on "traditional" religions led to overlooking another dimension, the resurgence and innovative dynamics of beliefs and practices that fall under the category of "paranormal" or "alternative" forms of thinking, believing and acting—magical, witchcraft, occult, esoteric, spirit, and "spiritual" beliefs (understood in a broad sense)—are indeed also spreading and changing by means of new digital technologies. In this regard, digital technologies are not only "religious" or "sacred", but they are also "haunted". Departing from a particular topic of primary importance in this field, the ghost, i.e., the different ways by which spectral forms manifests themselves in the new ecosystems of digital technologies, and the way in which technologies reshape the ghost figure, this paper intends to shed light on the logics of this less considered facet of the digital revolution: the ways it participates in a reinvention of the paranormal and a hauntology of technologies. And in parallel to the quest for *God online*, it is also possible to engage in *virtual ghost hunting*.

Keywords: digital revolution; internet; ghosts; hunting

1. Introduction

It is a well-known fact that digital technologies have played a decisive role in the recent transformation of humans' relationship with the ideas and practices associated with the sacred. Religions, societies and cultures have been deeply impacted by the digital revolution and have had to adapt to their quickly changing landscape due to the global extension of information and communication technologies (ICTs). In the context, religions developed complex strategies to adapt to the increasing role of ICTs. This is especially the case with regards to the material embeddedness of technologies that have rapidly been adopted and integrated to the new adaptative strategies of religions: the need to have an online presence, the necessity to use electronic medias to maintain social relationships with to change the ways of maintaining the loyalty of followers, to adjust their messages to new modes of dissemination, and, in return, the technologies themselves are now being reinvented under the inspiration of religious ideas. They are even being transformed into *objects* of belief. The field of studies on the relationship between religion and technology is nowadays rich, dynamic and is developing particularly rapidly. However, the themes that emerged from research and discussions are highly polarized and unevenly distributed

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between studies that focus on technologies as *vehicles of belief*, on the one hand, and those that explore *beliefs in technologies* as forms of symbolism and practice, giving rise to new and original beliefs that arose and developed long before the start of the so-called digital revolution, on the fringes of the major religions.

Alternative religious beliefs and spiritual movements are, under such conditions, apparently more "adaptable" than ancient religious organizations, since they are significantly less rooted in specific traditions and therefore more subject to relocation or reinvention. The more flexible they are, the more adaptable they seem. One can mention, as valuable examples, the massive development of magical thinking in a context of high digitalization (Obadia 2020; Susca 2022), but also new forms of witchcraft that have quickly adapted to the techno-capitalist ecosystem, such as "TikTok witches" selling their services online, or the rise of digitalized soft esotericism in a spiritual supermarket through promotional platforms like Pinterest or Instagram. In other words, there are many and diverse new relationships between belief and technology emerging in the context of the digitization of societies and cultures, and, among them, some seem to reproduce ancient interactive schemes with "the supernatural" (believing *with the help of* technologies), while others are being significantly reinvented (believing *in* technologies). Strangely, old-time popular beliefs in ghosts, specters and other non-divine supernatural entities have a more ambivalent relationship to modern technologies: one the one hand, these technologies tend to reproduce old patterns of believing in a highly modern context (ghosts now "exist" online), while on the other hand, the very nature of ghosts and the way they surface in material worlds are impacted by the rise of new technologies (ghosts are not what they used to be).

If we were to sum up in a general way what makes the two movements (*reproduction* versus *reinventions* of ghosts) differ from each other, first and foremost one can say that both are challenged by the deployment of technology and the corresponding transformations in the field of beliefs and practices relating to the supernatural, but also rapid changes that affect the socio-technical ecosystems in which they are deployed (the AI and robotic revolutions, for instance). This field of reflection is mainly nurtured by theories derived from the study of major religions and new religious movements, which, according to the academic and specialized literature, are significantly impacted by these technological innovations. Several thematic developments have marked out the field: Digital Religion, online/offline religion, online/offline religions (Helland 2000; Campbell 2013), and mediated religions (Lovheim 2011) are among the key concepts of these new reflections. At the same time, however, phenomena that do not fall under the somewhat overdetermined category of "religion" are emerging, and those phenomena are as much concerned, and to a certain extent, maybe more, by the reinvention of beliefs attributable to/associated with digitization processes. In this context, the theoretical and empirical fields of investigation are just as complex as they are in the case for *religious* beliefs and practices, since those have a limited field of extension sacred but non-religious traditions, and even beyond sacred forms of supernaturalism, including digital magic (Obadia 2020), techno-magic (Susca 2022), and the magic of the Internet (Fischer 2014).

As residual assets of beliefs in modernity, there remains another category of forms and figurations of belief far more vague than theological and doctrinal ones, all the more since they appear in a dispersed manner, which comes under the concept of the 'specter'. This approach contributes to the discussion on the ways modern technology perpetuates or reinvents apparitions, ghosts, revenants and other entities. They still are characterized by "uncertain" ontological identity, located between the natural and the supernatural (Natale and Pasulka 2019). They still dwell in an essential but discreet setting in the shadow of the historical religious systems, in the course of the history of sacred beliefs (Callard 2019). Research on ghosts, however, tends to focus on certain historical periods, especially the

Victorian Era. Nowadays, only slightly mentioned in the scientific literature, these phenomena are re-emerging in force in the 21st century, benefiting from the communicational facilities of technological modernity (Bell 1997). Hence, the ghost is not/no longer a relic of a believing past relegated to a secondary level, a survival, in the face of the implacable advance of technology and scientific rationalism that have disenchanted the world. Ideas, symbols and beliefs relating to specters have moved from the realm of folklore to that of the parasciences or pseudo-sciences, following the trajectory of the category of the "paranormal", which trails the path of the "occulture" that has blurred the lines between scientific rationalism and folk beliefs in high modernity (Kripal 2010).

This paper focuses primarily on the contemporary phenomenon of specters and ghosts as they manifest themselves in a regime of high digitization and mediatization, i.e., *in* and *through* electronic *and/or* connected technologies. One question will guide this contribution: How are new Internet and digital technologies transforming the figure of the specter? Trained in the anthropology of beliefs and religions, I have been exploring digital worlds for some years now, and for this paper, I have favored a netnographic approach, collecting information directly from the Internet, from English-language websites dedicated to ghosts, in particular online video sharing and social media platforms, such as YouTube. In a previous paper, I outlined the different types of ghosts one can "meet" through digital technologies: "mediatised (made by the technologies of 'hunters') and mediatized (constructed within the framework of cultural industries) are deployed on screens that unfold narratives of effects of reality (for the former) or fiction (for the latter)" (Obadia 2021).

The methodology designed for this study has been framed after a netnographic or digital ethnography approach—i.e., the collection of data by means of digital tools (web scrawling, data extraction) and content analysis. The research strategy consisted of using several web search engines (starting with Google, and using alternative ones like DuckduckGo, Qwant or Ecosia) with large keywords (ghost–ghostly). Relevant sites have been selected on the grounds of keywords relating to the topic (ghost/ly–hunt/ing–digital) and content analysis to evaluate the relevance for the study. The websites containing movies, pictures or textual accounts have been preferred to others that are less informative—the corpus only comprises online resources in which the topic of "ghosts" (as supernatural entities, excluding alluding references to other kinds of "ghosts") was central to the discussion on "technology". Among the different electronic platforms in which scholars can find relevant information, YouTube and TikTok were the most interesting. YouTube, since it provides first-hand recordings, extracts from TV broadcasts and the comments on videos, offers valuable material to assess the attitudes of the online audience (of course, far from exhaustive), as demonstrated by Georges (2019). The relevance of TikTok for this topic is also related to the properties of the interface, since the platform broadcasts short videos that can quickly be publicized, with easy access, fast viewing and potentially go "viral". The two platforms consequently plays complementary roles in the reinvention of ghosts and the dissemination of spectral figures in the modern digital ecosystem; they have been investigated in parallel. Finally, the paper also relies on hypertextual data collected occasionally on forums and other sharing platforms, like Discord or Reddit, owing to the importance of such digital structures for collecting hypertextual comments, exchanges and opinions about a given topic—in this case, ghosts.

In addition to this strategy for collecting *first-hand* information about ghosts (i.e., visual or audio elements relating to "ghosts" themselves), I analyzed case studies based on secondary sources, including news websites and online reports of spectral apparitions. I also draw on my own empirical experience dealing with specters as an amateur and occasional ghost 'hunter'. Considering that specters are characterized by the ontological regime of event-based existence (in this regard, they are "*things that happen*" according to

ethnologist Delaplace (2018) and that "spectral events" are dependent on the conditions by which they are recorded and constructed by means of techniques, the emphasis will be put here on the relationship between beliefs and collective representations of machines. I will conclude with a broader reflection on the place of specter in the digital revolution.

2. The Tesla or the Unexpected Detection of Ghosts

Let us start with a strange case of a surprising (unpredictable) affair of ghost detection. In spring and summer 2021, a challenge on the social network TikTok echoed in the mainstream media, but strangely originated in the very narrow and particular niche of media specialized in cars. A Tesla model, a sophisticated car built by the company run by the famous Elon Musk, and packed with the latest electronic devices and sensors, epitomizing, as such, the quintessence of 21st-century high-tech production, was the material site where strange "things", namely *specters*, become manifest on the driver's control screens. Some Tesla owners driving through cemeteries indeed reported seeing "human-like" figures on their car's control screens, as they are supposed to appear when the car meets a living passerby[1]. However, when the eye of the smartphone camera that captures the scene looks up from the screen to the outside of the car, no human being is visible. This experience was repeated several times by different people (all of them owning a Tesla, of course) who reproduced the conditions of this "test" in different geographical and cultural contexts[2]. Each time, the mobility sensors in the Tesla captured the image of a human-like silhouette, although there was (seemingly) not a single living person in the vicinity of the vehicles. By a snowball effect, the videos circulated on the Internet, although it is almost impossible to state when all this started or when the first ghostly manifestation occurred. Further, no one was even able to give a decisive answer, indicating or suggesting what this phenomenon is likely to be: a ghost, a fake video, or a "bug" (in the technical meaning of the term).

As the first videos of these "Tesla Ghosts" went viral, other similar strange apparitions were experienced and recorded, in somewhat different geographical, cultural and linguistic contexts (United States, Great Britain, France, etc.). Tesla drivers, men and women, of different ages, reported the same phenomenon: a camera films the scene from inside a car, to gain access to the detector screen, in subjective enunciation, the driver and passengers talk in the background, describing the scene. It is important to note that, while darkness and nighttime are more likely to be associated with the aesthetics of ghostly apparitions and paranormal activities and, in particular, that of videos on platforms (Obadia 2021), one can notice that most of the videos reporting paranormal activities on the screen of a Tesla driver were recorded during the day. Moreover, most take place in ordinary and mundane locations on the street or in a private or public parking facility. Of course, one would have thought that a cemetery or some other "spooky" sites would be more conducive to such a "paranormal" event.

This phenomenon generated only a limited yet significant buzz in the electronic media, raising the question wavering between rationalism and supernaturalism, whether it is merely a technical glitch or malfunction that is causing these apparitions, or whether Tesla Inc. inadvertently designed a control system that can detect and film ghostly beings. In fact, some of the blogs that reported ghostly apparitions on Tesla control systems went on to celebrate the phenomenon as potentially solving the millennia-old question of how to prove and document the existence of ghosts, thanks to modern technological devices. Since the first recorded evidence of ghostly presences in human imagination (ca. 3000 BCE according to the latest discoveries), humans have indeed attempted to set up technological tools designed to capture and document ghostly presences and communicate with ghosts. What is interesting in the "Tesla case", as we can call it, is not only the fact that Elon

Musk's high-tech devices are used for purposes other than the identification of obstacles in the surroundings of the car, for the safety of the driver, and only by accident might reveal the "presence of ghosts". The main interest of the topic lies in the viral and mimetic process surrounding this fortuitous discovery by several people around the world, who have started to test this high-tech "tracking system" for ghosts.

This is not the first time that such "supernatural" interpretations have been associated with new technologies, but this example is one of many that demonstrate how digital technologies provide fertile ground for the re-emergence of "paranormal" beliefs or beliefs seen to belong on the fringes of religion and society. For example, my own research on *orbs*, these luminous circles considered to be "supernatural messages" (angels or ghosts), for example, has evidenced the fact that, in this case, the more sophisticated photographic technology becomes, the more it paves the way for the supernatural (Obadia 2018). Hence, a more theoretical question arises: What are these "apparitions" a sign of? It opens up another area for discussion, on the relationship between magical, occult, and undecided beliefs and advanced technologies, both in terms of the capture or creation of these phenomena by advanced technological tools and control systems, but also in terms of their dissemination of information and communication networks.

However, while academic research on Digital Religion focuses on the ways religions respond to the opportunities (as a chance to reinvent themselves) and challenges of the digital revolution, the mosaic and variegated world of the supernatural, popular beliefs, magic and esotericism is unfolding, raising questions that are very different from those usually addressed in the field of Digital Religion.

However, this is precisely the aim of this paper: to show (a) that the reflection on beliefs and new technologies is just as dynamic in the field of the paranormal as it is in that of religion, (b) that beyond the figure of the ghost, we can unfold and examine an entire field of practices and representations relating to the supernatural not necessarily Sacred, defined as such in traditional religions, and (c) that the scholarly interest for the interaction between belief systems and digitization processes entails taking into account other forms of belief systems and supernatural entities not conforming to traditional beliefs systems, and especially monotheistic religions.

3. Ghost Technologies or Technologies for Ghosts?

The history of ghosts is predominantly a history of ideas and representations of death and the Afterlife. Therefore, this history of spectral entities leans on another, invisible world, even if the entities that dwell in it are believed to visit our human world and to interact with us (Baker 2017). This history sometimes overlooks the *techniques* humans have employed to communicate with the invisible world and conjure the presence of ghosts in our world[3]. An exception to this is the focus on the medium through which human–ghost interactions take place, for example, spirit possession, which is widely documented (Pócs and Zempléni 2022).

The figure of the ghost assumes an important role in the collective imagination of the nineteenth century in the West and, consequently, in the human sciences (Owens 2017). Firstly, because the heuristic potential of the ghost has not been exhausted, and this point justifies a continuity in the studies in hauntology (D'Antonio et al. 2018, etc.), but also because new theoretical approaches, concepts and methods (Davis 2005) are opening up and making it possible to renew classical perspectives on spectral manifestations (Delaplace 2018). The ghost was on the way to becoming the epitome of modernity when Derrida (1993) laid the foundations of a hauntology, which considers a new *Dasein* on a somewhat blurred frontier between reality and imagination, past and present. He thus inspired a

"spectral turn", later theorized as a paradigm that extends the scope and consolidates the consistency of the concept of "spectrum" (Luckhurst 2002).

Moving beyond the narrow boundaries of textual fictions and figurative representations in graphic forms, paintings and other illustrations, the modern ghost (i.e., the spectral figure reinvented in modern terms, views and in the lens of new techniques) has found new modes of manifestation in media (screen) technologies and, more recently, in digital (connected) technologies. This invigorated rather "old" practices, such as the chase to capture ghostly entities (qualified as "hunting"), but repacked them in new conditions. A first process is that of the *mediatization* of ghosts in the media of popular culture. Ghost stories that were embedded in and transmitted through oral traditions and symbolic and graphic representations were revived by print media, then audio/radio, and, finally, on the screens of cinema (Tweedie 2018; Clanton 2012) and later TV (Leeder 2015). More recently, digitalization has facilitated the manifestation of ghosts—or Ghost 2.0—on computer and smartphone screens in new forms in complex ecosystems of multimodality and electronic connectivity (Fleischhack and Schenkel 2016). While audiovisual media already contributed to make spectral phenomena audible and visible, expanding "ghostly" apparitions beyond traditional textual and oral media, the digital revolution played a significant role in a second process, the relocation *online* of the traditional practice of *ghost hunting* insofar as it entails a significant technologization of the ways by which specters are identified and actively hunted, as seen in the Tesla case, even if this was sporadically experienced by amateur and unexperienced people.

4. The Internet, Digital Hunting, and Ghost 2.0

The network of networks (the Internet) was born out of an ancient proximity between technologies and representations of the invisible. Ever since Thomas Edison, inventor of electricity and pioneer of modern communications, devoted himself to creating a machine that would record the voices of the dead (Baudouin and Berton 2015), the history of modern ICTs has been intertwined with the histories of religion, beliefs and paranormality. While 'scientificity' (Latour 1991) dictates an official history of technology that overlooks or downplays belief in and aspirations for human–nonhuman interactions, history indicates that technological progress has had an intimate relationship with the so-called "irrational". At the birth of the Internet and connected electronics in the 1960s and 1970s, for example, "spiritual" influences from Asian traditions were said to have played a driving role in technological creativity (Rheingold 1993). The "dark" side of the web now appears to be a key element in its history, which is not defined solely by a secret, illegal and often criminal online activity, but also by occult or esoteric beliefs, which influence the history of the Internet, earning it the title of "haunted technology", as recalled by author Biju Belinky who recalled in 2019 that "*Today, a quick YouTube video search yields hundreds of results of people claiming that their devices are haunted or possessed*".[4]

A multitude of objects susceptible to support these kinds of beliefs are as diverse in forms and nature as those relating to ufology, cryptozoology, or, broadly speaking, esoteric traditions (initiatory and magical) that are circulating on the Internet. These range in the category that was previously described as 'popular' beliefs and that have later on been subsumed under the category of "paranormal", which emerged as such at the beginning of the 20th century (Laycock 2014). But the network of networks has also become a sounding place for ghosts of a new kind, prolonging, as such, the function of materializing the invisible that was previously assumed by photography (Sconce 2000). These ghosts are captured in the form of images on screens in a fairly wide range of variations: in the modern corpus of online images, anthropomorphic ghosts stylized in the Victorian aesthetic share their media space (the screens of computers, smartphones, TVs and cinemas) with more

nebulous, fleeting forms, shifting shadows, misty silhouettes or simply invisible figures that manifest themselves in lights that go out, furniture that moves, doors that slam and unexpected sounds (Vernon 2025).

Without the corresponding technology, aimed at recording the "traces" of presence and rendering them "visible" to a wide audience, these apparitions would remain what they traditionally are: "fleeting", "strange" and "uncertain" phenomena. This first category is characterized by fortuitous appearances, recorded "by chance" or "by accident", emerging in the collective imagination owing to modern societies' race for technologization, where recorded videos and audios have significantly boomed and disseminated online up to billions each year, thanks to technological sophistication and efficiency. A massive amount of video data is constructed and/collected this way, notably through the lens of surveillance technologies. As goes the modern motto and the many alerts from contemporary whistleblowers, we live in an age of "digital surveillance" where technologies of "Big Data" rule the world. As an unforeseen consequence of the rise in technology in everyday experience, digital devices facilitated the renewal of ghosts in modern cultures, and, by way of consequence, Big Data also contributes to ruling the afterworld.

At the same time, another major transformation has taken place, concomitant with the above-mentioned one, and this time of a *sociological* nature: the quick and unexpected emergence of a worldwide 'ghost hunters' movement, driven by a desire to harness digital technologies to serve an ancient fascination with death, the Afterlife and communication with spiritual entities (Holloway and Kneale 2018). The same movement is also fostered by the globalization of communication technologies and the mimetic adoption of Western-styled models of "paranormal investigation". "Ghost-hunting societies" have, in parallel, flourished, first in the global North (here, again, inspired by the first societies established in the context of Britain and the United States) (Eaton 2015, 2019). Haunted sites and locations have become major attractions at the heart of a global circuit of paranormal tourism (Holloway and Kneale 2018). A National Ghost Hunting Day (30 September) was even established in 2016 by a British paranormal research society. All these signs converge towards the idea that ghost has become a topical 'hype' reinterpreted and promoted by modern popular cultures (Holloway 2010).

All around the world, not only in highly advanced Western countries (in economic and technological terms), courses are given on the "paranormal" and training curricula are provided in "communicating with ghosts"; "experts" in spirit communication write and publish bestselling books, and advertise their work on videos. In the background, the paranormal has become a media subject, giving rise to a growing number of television programs from the 2000s onwards (Koven 2007), which have become accessible and natural entities because they are present on the screens (Williams 2010). From there, ghosts migrated to other parts of the media ecosystem, sliding from cinema screens to those of computers and smartphones, i.e., connection technologies (Kozlovic 2016).

5. Modern Ghosts or Ghosts in the Context of Modernity?

How can one explain this contemporary fascination with ghosts in an era of high modernity, which is expressed through the wide distribution of ghost figures on electronic media? On the one hand, the process of modernization of mentalities, which has generally been considered from the prism of secularization in the 1960 and 1970s, was supposed to lead to a decline in belief (the first meaning of secularization as equal to atheism) before a recent conceptual revision, and secularization and modernity more generally were seen as a condition for "renewal" rather than for a decay of belief. While this theoretical model ("from-decline-to-renewal") works well for *religion* (at large) from the second half of the 20th century onwards, more secret, occult or magical beliefs regained visibility as early

as the 19th century, i.e., when Rationalism started to prevail over "irrational" ideological systems in Europe (Obadia 2022). Just as the destiny of religions throughout the techno-media revolutions could have be interpreted (once again) in terms of "loss" (of relevance, signification and resonance, see Debray (2001)) or of "restoration" of influence but at the cost of important adaptations to media and connected ecosystems (Campbell 2013), occult, magical or esoteric beliefs are similarly revitalizing alongside some technological revolutions (Obadia 2020). But at what cost? Looking at the empirical evidence, we are quite convinced by the assumptions that (1) spectral apparitions are less affected than other irrational entities or events, since (2) digital technologies substitute for older ones for the materialization of ghosts and the communication with them.

YouTube is a platform of particular interest from this point of view: under the general category of "paranormal investigations", one can find a wide variety of videos, sometimes offering raw information, more often accompanied by a commentary inviting the audience to focus their attention on visual and/or acoustic signals, and, by way of consequence, induce their interpretation in the direction of the video's producer (Georges 2019), just like promoters of Spiritism attempted to inspire belief in ghosts as plausible from the viewers' point of view, by trickery effects in their photographs. From Spiritism to Youtube, technology makes the link, and it is particularly interesting to note that the category of "paranormal" renews the relationship with the "invisible" by giving it a scientific accent (and justification): technology serves to legitimize the 'scientific' nature of the investigation, whether it is driven by confidence in the reality of ghosts, or can be motivated by skepticism[5].

For anyone in possession of (operational and efficient) digital equipment, and adopt a posture of 'searching' for these signs (whether you believe in them or not), it is entirely possible to set yourself up as a 'paranormal investigator' and amateur 'ghost hunter'. To try this out, I myself made recordings and took photographs and videos at night with a digital camera in France, as well as in China, India and the UK. In these given contexts, however, regardless of cultural differences, the manifestation of Orbs is aligned with similar contexts (in the dark, captured by digital light), form (circle, luminous) and conduct (crisscross in front of the camera, sometimes slowly, sometimes quickly).

Orbs are a hypermodern, stylized incarnation of specters shaped by digital technologies, even if the beliefs associated with such apparitions remain unclear (Angels? Revenants? Ghosts? Extraterrestrials?). In rationalist views, these are just optical illusions or technological bugs. The material collected on this occasion has not been disseminated as fast as other ghosts' images had been; yet, it has also become viral in a certain way, since this is one of the most widespread attitudes among other amateur 'hunters' who upload their videos to viewing platforms, thus making them part of an open economy of symbolic resources of belief. The videos thus provide empirical evidence to fuel speculation about phenomena whose identity is uncertain and disputed, but which are always associated with entities or phenomena that go beyond human understanding and are classed as "irrational" or "paranormal".

Under the circumstances of rapid development of media and electronic platforms, several types of production have developed and characterize media productions nowadays. If we look at the corpus of videos available on one of the most popular YouTube sites, we can categorize the classes of videos (in an obviously reductive way); yet, for the purposes of typology, there are:

- *Ghost videos*, where ghosts are clearly identified as such in the title and metadata of the document, but where they manifest themselves indirectly, through recordable expressions (voices, shapes, moving objects) and in an apparently incidental manner.

- *Videos of alleged ghosts*, where these are designated by visual effects to make them intelligible (highlighted, surrounded by colors, with slow-motion effects), where doubt, rather than belief, is suggested by the producer or broadcaster, but here again in an apparently random manner.

In this set, cameras capture spectral presences in an apparently fortuitous manner: the grid of spaces of human existence by CCVT-type recording devices. In this case, these materials illustrate a process of reinvention of the classical (i.e., traditional) spectrum in the digital ecosystem: what changes are the media that materialize the ghosts.

Other types of videos, however, constitute a body of material that paves the way to other considerations about ghosts and the identification processes they are subjected to:

- "*Amateur*" but nevertheless staged videos showing "ghosts" or spectral phenomena, which are intentionally tracked by individuals who set up techno-scientific devices for this purpose (see above).
- *Television or Internet programs explicitly dedicated to the detection of these phenomena*, with sophisticated staging, which take a broader approach, in the sense that they not only *perform* the experience of paranormal phenomena, but also make explicit the technical context (by installing a team and technological tools) and the historical and social context (by presenting the place, the protagonists and its history, the result of a more or less achieved in-depth social investigation).

In this second set, images are, by way of consequence, explicitly constructed by technology "in the field", while the idea of ghost is in parallel with a part of a broader "media system", and, as such, designed and intended to be published and viewed by a wide audience (Hill 2010). In both cases, the world of ghosts is once again circumscribed by the work of collective imagination and by techniques to materialize them. After having been constructed by rumors, tales, legends and other narratives over the centuries, but also more symbolic or graphic representations, it is now through media and digital technologies that they have revived in the collective imagination, in both narrative and figurative form.

6. From "Watching" to "Hunting"

The videos of the first category seem to be a continuation of a traditional and ancient mode of interaction with supernatural entities: those relating to an 'accidental' encounter (on the human side) or to a communication event intended mainly from the "supernatural" side and directed towards humans. The videos in the second category introduce the remarkable novelty that we witness a significative inversion in the relationship with specters, which are this time actively chased by human beings, with the help of the most advanced technologies. While much of the material captured by these devices is the result of efforts by individuals who fall into the category of 'amateurs', broadcasting their 'passion' online, other 'hunters' are involved in the same media coverage, but in a more professional way: those who, individually or in groups, claim to have 'specialized' in the field, either by virtue of mediumistic 'powers', or by virtue of training or experience.

Be they isolated individuals or teams acting in groups, these 'hunters' are equipped with a complex paraphernalia that is made of devices at the cutting edge of high tech (as they are presented), and each year more devices can capture rather different and discrete categories of signals associated with ghosts: infrasound sensors, motion detectors, voice recorders, movement and temperature sensors, and sometimes even a Geiger counter, are among the devices deployed in spaces specifically bounded for the hunt, and which are videoed for broadcast either on the major television channels (such as the *TAP shows*, *Ghost Adventures*, or *Ghost Hunters,* just to mention those that were broadcast from the 2000s onwards). These television productions are part of a revival of belief in ghosts and the paranormal in popular modern culture, while at the same time being heavily criticized for

falsifying reality and staging simulated spectral apparitions—although the debate remains open to this day (Georges 2019; Obadia 2022).

As is the case for religion, the new digital ecosystem framed by Internet communication and other connected new technologies can offer useful resources for beliefs: it enables "ghost hunting" practices by means of technologies, explaining the modalities and principles of this activity. In this case, as can be found on one of the many sites (such as https://www.ghostsandgravestones.com/how-to-ghost-hunt, accessed on 12 December 2023), and, in this case, the sites act as digitalized/hypertext versions of books and products and are akin to textual works that can also be found disseminated or promoted on the Internet.

In addition to media technologies, whose contribution to the visibility of ghosts in modern times is not only undisputable but crucial, attention must be called to technologies used in situ by observers as machine-driven tools aimed at capturing the "clues" or "signs" of spectral entities. These are all discrete signals that appear in a mostly isolated and dispersed way. Here, a sound picked up by an ultra-sensitive recorder, a visual effect through a night vision camera, then again a change in temperature, and, more recently, wave sensors, hunters are surrounded by machines, and they assume specific roles according to these paraphernalia: those who explore camera in hand, those who record, and those who, remotely, decipher the images and sounds. But this technology, which attempts to objectify ghosts by capturing and recording, is counterbalanced by the role of organic bodies, those of the investigators, who are still the main "site" of subjective experiences that they report into live testimonies (with the narration of their feelings) but also through changes in attitude: it regularly happens that the investigators appear to be seized with astonishment when faced with a physical sensation (described as a 'presence', a sudden change in temperature, or even a blow felt, or, at its most visible, a scratch) or feel the control of their body slipping away from them.

In between the two poles, interpretations wave between, on the one hand, the objectification of signs by means of technology (forms and sounds are recorded), and a tension between credulity and skepticism; on the other hand, on the side of the observer or investigator' subjectivity, each sign experienced by the body leaves room to uncertainty and interrogations, and the hunters often hesitate between technological bugs and the unambiguous manifestation of a ghost. In other words, the impact of digital technology seems more significant when it is about the material attributes of the media rather than on the very nature of spectral phenomena they are designed to unveil. Bodies and personal experiences in support of technologies still are the main "sites" to encounter spectral expressions and capture their specific nature.

7. Sacred or Haunted Technologies?

At the very least, then, modern technologies play a crucial role in the renewal and transformation of spectral forms and of the relationship that humans sustain with them. But technological modernity triggers an obvious *technologization of spectral entities* that, in return, nurtures these "haunted technologies" with media content; otherwise, they would not be "haunted" (Sconce 2000). Yet, modern digital technologies raise opposite and often contradictory viewpoints, illustrating the tension between the belief in the supernatural and paranormal on the one hand and skepticism based on rationalist explanations on the other. An example can be provided here: the digital "ghost images" that pop up on screens of high-tech devices for unknown reasons can be conceived of both as spectral apparitions and as technological malfunctions that have nothing to do with the "paranormal". Some actors in the technological field have even adopted a posture of rejection of these forms of belief, attempting to exclude beliefs from the domain of technology, looking for their

disqualification by opposing them with technologies designed to bring back technologies that are far too "enchanted" in this respect, in line with scientific rationalism.

For example, Smartfrog Ltd. promises video surveillance technologies that keep away "ghosts and thieves". One of the managers, interviewed on the website Eu-Startup (https://www.eu-startups.com/2019/10/whats-behind-the-internets-ghost-videos-and-why-high-res-ip-cameras-are-the-best-protection-against-ghosts-and-thieves/, accessed on 19 December 2022), suggested that "*Ghost videos are full of optical illusions, technical manipulations and faults"* and aims at demonstrating that, finally, the most advanced technologies show evidence that we are in the presence of fakes. *"Hundreds of illusionists have made a living from these apparitions,"* and *"Some people hope to make quick money by creating fake videos for fans and followers on online media,"* leading to the conclusion that *"Looking at the videos circulating on the internet, we can safely assume that ghosts hate high resolution cameras. An internet camera with HD resolution is therefore the best protection against possible hauntings."* This technocentric posture relies on the positivistic premise that belief would vanish in the course of the social and historical progress of technologies; however, the rapid progress of high-tech in society goes together with a periodic revitalization of ancient forms of beliefs, purportedly irrational. Stef Aupers regarded this process as a "revenge of machines" and the renewal of magical thinking against rationalism (Aupers 2002).

If new digital technologies are having an impact on religion, magic and witchcraft, beliefs in specters and the supernatural/paranormal are similarly affected. Smartphone technologies, for example, play an essential role in the individual appropriation of religious resources and facilitate the dissemination of beliefs, by means of religious apps, for instance (Campbell et al. 2014). In the case of beliefs in ghosts, apps are also part of this active search for ghosts: there are now numerous smartphone applications such as DeadBox, Spirit Scanner, Ghost Hunting Tools, iEMF and Ghost Radar, which are concentrated on sophisticated technology in a single electronic program, supposedly able to 'detect' the presence of ghosts. The Internet, TV screens, electronic platforms and even smartphones have become modern "creepy places", replete with supernatural entities cultivating a sense of "irrational" in collective imagination; yet, technological ecosystems are complex and include also other devices that similarly partake in the fabric of ghosts in modernity.

8. Conclusions

The Internet, through the thousands of sites and pages devoted to ghosts, magic, witchcraft, and religions, aligns with an "open economy" of the sacred and ghostly apparitions. This homological feature fits the contemporary "market structure" in which individuals have access by themselves belief systems rather than in collective, normative and traditional conditions, based on authority and the monopoly of traditions. Such a situation creates tensions between historical religions and new spiritual movements, online religions and religions online, magic and religion, the rational and "irrational", to name a few. For sociologists who have been interested in this socio-technical dimension of modernity, new technologies facilitate or generate a more active approach to the sacred, which characterizes modern attitudes to religion and spirituality. For example, the concept of the 'spiritual seeker' (Warburg 2001) offers a new model of social actors, who are more active in their relationship with the sacred, enabling them to assert their tastes and desires, to mix experiences and symbols, and to perform complex identities and affiliations (Hervieu-Léger 1993).

Religions have indeed entered the age of digital capitalism and are subjected to this new dynamic of personalization and individual choice (Possamai 2018) as a result of modernity and globalization (Mathews 2000). This entails the risk of weakening their social and theological unity (or their "fragmentation", according to Hervieu-Léger (2001)). Many

authors have considered that modernity was a source of individualization and a change in the attitude of social actors towards sacred resources (among other things). Is the same true of 'irrational' but non-religious beliefs, such as ghosts? The "magical world" of the paranormal, which has both a rationalist facet (through its techniques) and an irrationalist dimension (through its beliefs), does not seem to be subject to the same logics religions are subjected to.

Studies in Digital Religion have persuasively contributed to mapping the different ways the sacred is reinvented in the context of the modern technological and social mutations. Issues related to *religion* in digital contexts are among the more widespread and common in recent studies, while other topics touch upon magic and witchcraft, or fake and parody cults, among other perspectives, that could have been listed additionally, like "spiritualist" approaches to technologies. None of these approaches, however, fully covers the wide range of technological-inspired expressions of the sacred or the supernatural. Issues relating to other dimensions of the supernatural, like spectral apparitions, ghostly figures and the "haunting" of digital technologies, have received less academic attention; yet, the paradigm of "haunted technologies" is nowadays relevantly established to explore the hybridization between ancient supernaturalism and modern high tech.

There is therefore a need to frame a specific agenda for research on digital hauntology, at the crossroads of studies on religion, magic, science and technology studies. Further, the recognition of the specific nature of *ghosts* in between reality (of apparitions) and imagination (of what is behind), belief (in or about ghosts) and rationality (of repertoires of explanation), and materiality (of manifestation) and symbolism (aesthetics and signs).

Technology has already been the key to understanding the ontological regime of ghostly figures throughout centuries, and this is still a relevant entry to understand the ways they relocate *mutatis mutandis* in the context of modern media and connected environments.

While Daniel Wise believes that the experience of ghost hunting is sacred, even religious per se (2022*), and, recently Eaton, described it as a kind of 'spiritual practice' (2014), the fact remains that ghosts are still attached to a fundamental ambivalence, characterized by the tension between rationalism and belief and between popular and scholarly beliefs (Goldstein et al. 2007). They are embedded in the frameworks of popular culture of modern societies, and, in this regard, technology plays a key role in their acculturation (Mays and Matheson 2013). Yet ghost hunting in/through websites can be seen as both a continuation of and a rupture with the attitude prevailing in ancient societies towards *their* traditional forms of spectral entities: *persistence* because a ghost remains a fluid "thing" or "event", elusive, ethereal, manifesting itself in fleeting and partial forms, and ruptures because its supports are specific to the digital revolution and new aesthetics. Furthermore, the ghost has become a cultural hero, and ghost hunting is part of a kind of highly ambivalent relationship between modern people and the supernatural, but also with technology (Fisher 2012): the ghost, indeed, conjured up by modernity, which ultimately failed to eradicate it in the name of rationalism, has finally coalesced with it (Caterine and Morehead 2019).

Beyond "haunted technologies" themselves and the corresponding process of technologization of haunting, one question arises: How can we explain the return of magic in the modern collective imaginary, especially when it is located in the very heart of technological tools and practices? The famous saying from SF writer Arthur C. Clarke, "*Any sufficiently advanced technology is indistinguishable from magic*" (1962), is a first response, but half a century later, the artist Tobie Revell expands and revises it when he states that "*Any sufficiently advanced hacking is indistinguishable from haunting*"[6].

Ghosts used to be terrifying and kept at a distance by living humans. They remain a source of mystery and fear in spite of the fact that they are now broadcast by media and digitalized, closer to humans than ever before, owing to the digital revolution. Finally,

while ghosts are by definition 'virtual' actors in the world of belief (given that they are ethereal and have no materiality), they have been 'embodied' for millennia using the media offered by the socio-technical environment in each historical and geographical context. The digital revolution has prolonged this process not only by bringing the ghost back to the heart of the imaginary of the supernatural in modern societies, but also, by contagion or contiguity, to the materiality of the most sophisticated technologies that are supported by scientists and rationalist ideologies. Lauro and Paul evoke a "postmodern fantastic" that brings together old narratives about ghosts and new forms of imagining the supernatural, from the temptation of belief to the reality of unbelief (Lauro and Paul 2013).

One might think that we are the witnesses of a completely new form of relationship with the invisible, the supernatural or the sacred—an autonomous and voluntary attitude born of modernity, as reflection and illustration of the modern shift towards active individualization of the relationship with the sacred and a "bricolage" that we observe in the context of religions. However, the magical and spectral world has always been marked by an active relationship between humans and their objects of belief (de Martino [1938] 1971; Caillois 1938). Media and digital environments are, as such, giving this magical world a new chance to reenchant the life of humans in the context of modernity.

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Notes

1 See for instance https://insideevs.com/news/776769/tesla-ghost-detector/ (accessed on 5 May 2022).
2 In the USA: https://www.facebook.com/EvanEraTV/videos/tesla-in-cemetery-detects-ghosts-/1312472190351565/ (accessed on 5 May 2024) in France see: https://www.tiktok.com/@ge__vincent/video/7394839340876139781 in Canada: https://www.journaldequebec.com/2024/10/31/fantomes-et-couloir-dentites-detectes-par-une-tesla-un-cimetiere-du-bas-saint-laurent-attire-les-curieux (accessed on 1 February 2025).
3 See https://cryptozootees.com/blogs/zoo-keepers-blog/ghost-hunting-equipment-and-technology-throughout-time (accessed on 5 May 2022).
4 See https://www.huckmag.com/article/is-the-internet-haunted-an-investigation (accessed on 5 July 2021).
5 See https://www.snexplores.org/article/science-ghosts (accessed on 1 May 2024).
6 See https://thesocietypages.org/cyborgology/2015/05/20/ghosts-of-the-future/ (accessed on 12 March 2022).

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